

# NHS BLOOD AND TRANSPLANT

## CARDIOTHORACIC ADVISORY GROUP

### DCD HEART ACTIVITY

#### INTRODUCTION

- 1 DCD heart retrieval began in February 2015 for a 15 month initial evaluation period involving two centres; Harefield and Papworth. Since the end of the evaluation period, activity has continued with a third centre, Manchester, joining the programme in December 2016.
- 2 This paper looks at activity and patient outcomes from 1 February 2015 to 28 February 2018. It evaluates the number of retrievals and transplants performed by each team in the time period, along with the short and medium term outcomes of the recipients. For any donors who had their heart retrieved but not transplanted, the reason for non-use is also documented. All DCD Heart Transplant Supplementary Record forms have been received for this cohort.

#### RESULTS

##### Activity

- 3 In the time period, there have been 65 DCD heart donors, with 57 hearts successfully transplanted. In the initial evaluation period (ending 12 May 2016) there were 25 donations, resulting in 23 transplants and since this ended there have been a further 40 donations with 34 transplants. This activity is shown broken down by centre in **Table 1**. Manchester joined the programme on 5 December 2016 and so are only included after the initial evaluation period.

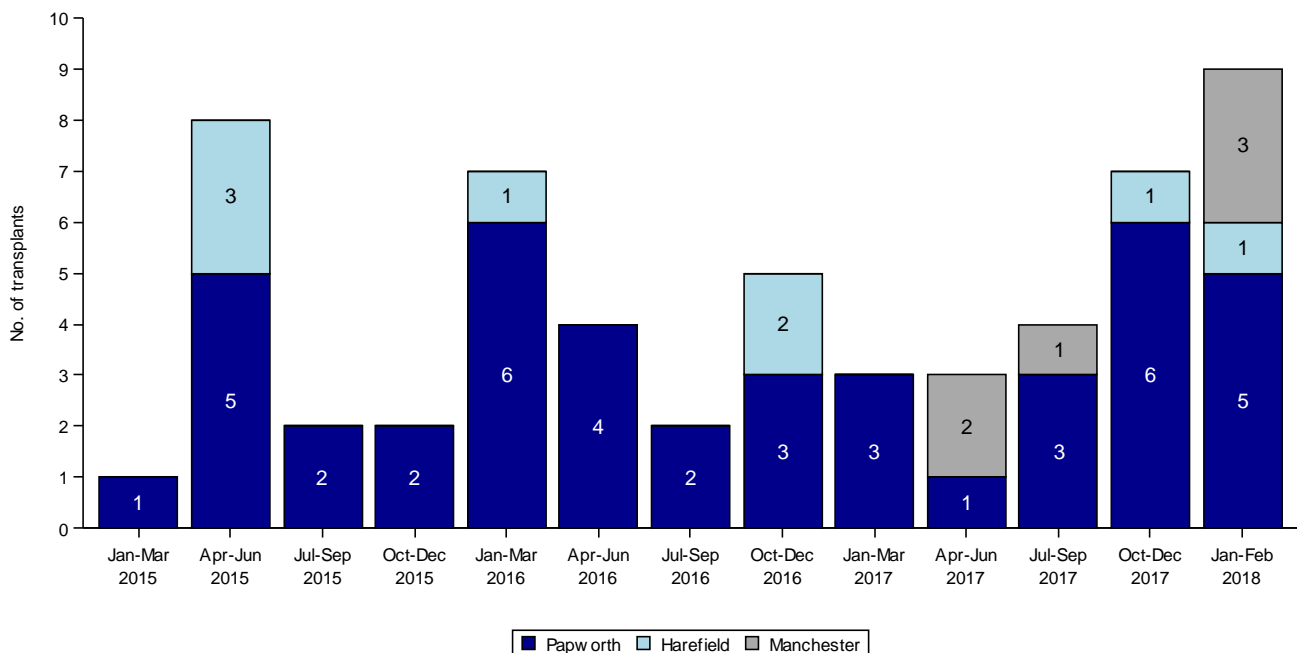
<b>Period</b>	<b>Centre</b>	<b>Retrieved</b>	<b>Transplanted</b>
1 February 2015 – 12 May 2016	Harefield	5	4
	Papworth	20	19
	<b>Total</b>	<b>25</b>	<b>23</b>
13 May 2016 – 28 February 2018	Harefield	5	4
	Papworth	28	24
	Manchester	7	6
	<b>Total</b>	<b>40</b>	<b>34</b>
<b>Total</b>		<b>65</b>	<b>57</b>

- 4 Across the whole time period, there have been 8 DCD hearts retrieved but not transplanted. The reason for non-use for each is seen below in **Table 2** and is taken from the DCD Heart Transplant Supplementary Record form. Where this is not available, as the form was returned incomplete, the reason was taken from the Hub Operations records.

Centre	Donation Date	Reason for non-use
Harefield	October 2015	Continuous ventricular fibrillation after reperfusion on OCS
	December 2017	Poor function on OCS
Papworth	July 2015	Declined for transplantation due to rising lactate level
	June 2016	Function
	January 2017	Donation ceased at recipient hospital - due to donor pancreatic tumour results from histology
	September 2017	Heart hypertrophic enlarged aorta
	October 2017	Angio performed coronary artery disease noted
Manchester	June 2017	Function

- 5 **Figure 1** shows the number of DCD heart transplants by quarter and centre. Activity has been increasing in recent months, with 9 transplants performed in the first two months of 2018. Please note that only two months (January and February) are included in the final bar.

**Figure 1 DCD heart transplant activity, 1 January 2015 to 28 February 2018, by quarter and centre**



## Post-transplant survival and support

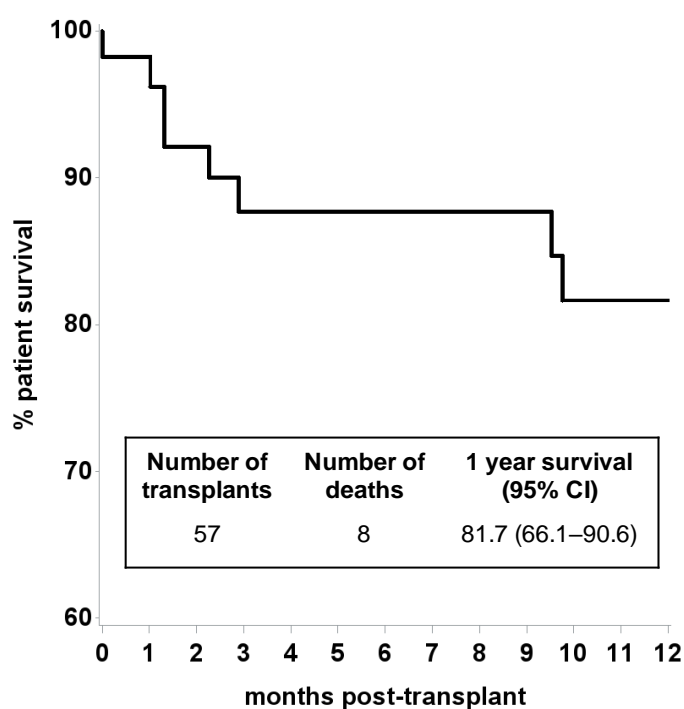
- 6 Of the 65 DCD heart donors, all but two donated at least one other organ; 11 donated their lungs and at least one abdominal organ, and 52 donated at least one abdominal organ but not their lungs. Three had no consent for lung donation.
- 7 The 30 day patient outcome of all 57 heart transplants are summarised in **Table 3**. This information is taken from one of three sources: the DCD Heart Supplementary Record form, the transplant record form, or the three month follow up form. There has only been one death within 30 days, with all other patients alive at that time.

**Table 3 DCD heart recipient outcomes at 30 days post-transplant, by centre, for transplants performed 1 February 2015 – 28 February 2018**

Centre	Alive at 30 days	Dead at 30 days
Harefield	7	1
Papworth	43	0
Manchester	6	0
<b>Total</b>	<b>56</b>	<b>1</b>

- 8 **Figure 2** below shows the Kaplan-Meier patient survival function up to one year for the cohort. The one year survival estimate for DCD heart recipients is 84.2% (95% CI: 69.2–92.2) and is comparable with DBD heart recipients (82.4% survival in 2016/2017 NHSBT Cardiothoracic Annual Report). As at 9 April 2018, there have been 8 recorded deaths of DCD heart recipients; one due to donor organ failure, one due to septicaemia, one due to a CVA, one multi-system failure, one was a sudden unexplained cardiac death, and three from other identified causes of death.

**Figure 2 Kaplan-Meier patient survival function for DCD heart transplant recipients, 1 February 2015 – 28 February 2018**



- 9 The need for post-transplant mechanical support within 30 days is shown in **Table 4** along with the devices used. Out of the 57 patients, 22 (39%) required mechanical support; most of which were IABP only.

<b>Mechanical support post-transplant</b>	<b>Number of patients</b>
Yes	22
- IABP only	10
- ECMO only	7
- ECMO and IABP	3
- ST VAD and ECMO	2
No	35

### DCD heart offering

- 10 DCD heart offering data were extracted from the UK Transplant Registry (UKTR) for the period 1 January to 31 December 2017. During this time, donor hospitals in eight out of 12 Organ Donation Services Teams (ODST) were part of the DCD heart retrieval programme (but not all hospitals in each team). DCD heart offering was (and is still) conducted locally by the Specialist Nurse in Order Donation, which means that some offers may not be communicated to Hub Operations to be recorded on the UKTR.
- 11 The offering information that has been recorded suggests that 104 DCD hearts had been offered during this time period. **Table 5** shows a breakdown of these donors by ODST and whether or not the heart was accepted, retrieved and transplanted.

<b>Organ Donation Services Team</b>	<b>Number of hearts offered</b>	<b>Number accepted</b>	<b>Number retrieved</b>	<b>Number transplanted</b>
Eastern	32	7	3	3
London	17	6	6	5
Midlands	10	1	1	0
North West	11	5	3	3
South Central	4	1	1	1
South East	13	7	4	2
South West	3	2	1	1
Yorkshire	14	5	3	2
<b>Total</b>	<b>104</b>	<b>34</b>	<b>22</b>	<b>17</b>

- 12 These 104 hearts generated 188 offers, 83 (44%) made to Papworth, 67 (36%) to Harefield and 38 (20%) to Manchester, as shown in **Table 6**. Overall, 82% of offers were declined, mostly due to no suitable recipients (25% of declines) and donor past history (17% of declines), but also donor size (10%), age (9%) and poor function (8%). Of the 18 that were accepted and not used, 13 donors did not proceed to donation.

Centre	Offers	Declined		Accepted, not used		Accepted and used	
	N	N	%	N	%	N	%
Harefield	67	60	90	6	9	1	1
Papworth	83	61	73	9	11	13	16
Manchester	38	33	87	2	5	3	8
<b>Overall</b>	<b>188</b>	<b>154</b>	<b>82</b>	<b>17</b>	<b>9</b>	<b>17</b>	<b>9</b>

## SUMMARY

- 13 This paper is for information only and is to provide the national picture on DCD heart activity. Numbers of transplants have now reached more than 50 and unadjusted survival outcomes are comparable to that of DBD transplants.

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